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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

CALIFORNIA FOREST AND RANGE EXPERIMENT STATION



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FIRE
Control
Statistics

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FIRES ON THE NATIONAL FORESTS OF SOUTHERN CALIFORNIA
WITH RESPECT TO FINAL AREA AND DISTANCE TRAVELED
BY THE SUPPRESSION CREW ON FOOT

The purpose of the accompanying tabulations is to show more precisely the degree to which fire occurrence is associated with roads. The desirability, from a technical standpoint, of expressing such a relation in numbers rather than in generalizations is plainly evident.

General

It is believed that the "distance traveled on foot" to a fire on the Angeles, San Bernardino, and Cleveland National Forests fairly represents the distance that the fire was from a road. This may or may not be true on the Los Padres because of the prevalence of horse travel in some parts of it. For this reason the tabulations referring to fires on the Los Padres have been kept separate in the present report.

Throughout the tables the area burned by "B" fires has been neglected. For the years concerned this omission amounts to less than 2 per cent of the total area burned on any forest.

Man-caused fires

As shown in table 1, 69 per cent of the area burned by man-caused fires on the Angeles, San Bernardino and Cleveland National Forests comes from fires originating within 264 feet of a drivable road; 78 per cent of the burned area comes from fires within 792 feet of a road, and 88 per cent of the burned area from fires originating within 0.25 miles of a road. Corresponding percentages of numbers of all fires and fires of different sizes are shown in the same table.

These data indicate:

1. The importance of front yard fires in total area burned.
2. The feasibility of tanker attack.

The Los Padres, according to table 2, presents a different picture. Here but 60 per cent of all fires can be reached by 264 feet or less foot travel and but 31 per cent of the man-caused area burned is

thereby accounted for. Another obvious limitation on the interpretation of Los Padres data has been previously mentioned. In any event, however, it is believed that different public habits of foot travel in relation to roads and trails on the Los Padres are apparent.

Lightning fires

Though lightning fires are of minor importance from an area burned standpoint, tables 6 and 7 are included to show the relative amount of footwork necessary to reach such fires. In addition, it is believed the data indicate the less severe burning conditions prevalent during and following thunderstorms because of the relatively large numbers of fires with longer walking distances yet very few spreading to 10 acres or larger. While the lightning fire problem is not to be dismissed as inconsequential it can nevertheless probably have more lenient standards of action.

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Table 1.- Angeles, San Bernardino, and Cleveland National Forests
 Man-caused fires according to distance traveled
 on foot by suppression force, by class of fire.
 Years 1934-1938, inclusive

Distance trav- eled on foot	A fires		B fires		C fires				All fires	
	No. of fires		No. of fires		No. of fires		Area burned		No. of fires	
Miles	No.	Cumula- ted %	No.	Cumula- ted %	No.	Cumula- ted %	Acres	Cumula- ted %	No.	Cumula- ted %
0.00 - 0.05	390	81	72	67	51	77	41,271	69	513	78
0.06 - 0.15	56	92	12	78	2	80	5,875	78	70	89
0.16 - 0.25	24	97	6	84	4	86	5,667	88	31	94
0.26 - 0.35	3	98	1	85					4	95
0.36 - 0.45										
0.46 - 0.55	3	98	5	90	2	89	3,580	94	10	96
0.56 - 0.65										
0.66 - 0.75	2	99			1	91	11	94	3	96
0.76 - 0.85										
0.86 - 0.95										
0.96 - 1.95	4	99	6	95	3	96	2,458	98	13	98
1.96 - 2.95	2	100	3	98	1	97	100	98	6	99
2.96 - 3.95			1	99	1	98	300	99	2	99
3.96 - 4.95			1	100					1	99
4.96 - 5.95										
5.96 - 6.95										
6.96 - 7.95										
7.96 - 8.95										
8.96 - 9.95					1	100	885	100	1	100
9.96 + Unknown										
Total	484	100	107	100	66	100	60,147	100	657	100

Table 2.- Los Padres National Forest
Man-caused fires according to distance traveled
on foot by suppression force, by class of fire.
Years 1934-1938, inclusive.

Distance trav- eled on foot	A fires		B fires		C fires				All fires	
	No. of fires		No. of fires		No. of fires		Area burned		No. of fires	
Miles	No.	Cumula- ted %	No.	Cumula- ted %	No.	Cumula- ted %	Acres	Cumula- ted %	No.	Cumula- ted %
0.00 - 0.05	42	78	21	51	12	40	3,746	31	75	60
0.06 - 0.15	2	81	27	68	2	47	1,204	41	11	69
0.16 - 0.25	2	85	3	76					5	75
0.26 - 0.35										
0.36 - 0.45			1	78	1	50	72	42	2	74
0.46 - 0.55	5	94	3	85	4	65	5,112	85	12	84
0.56 - 0.65										
0.66 - 0.75					1	67	30	85	1	85
0.76 - 0.85										
0.86 - 0.95										
0.96 - 1.95	1	96	2	90	1	70	640	90	4	88
1.96 - 2.95			1	93	2	77	410	94	5	90
2.96 - 3.95			2	98	1	80	60	94	3	93
3.96 - 4.95			1	100	3	90	403	97	4	96
4.96 - 5.95	1	98							1	97
5.96 - 6.95	1	100							1	98
6.96 - 7.95					1	93	120	98	1	98
7.96 - 8.95					2	100	190	100	2	100
8.96 - 9.95										
9.96 + Unknown										
Total	54	100	41	100	30	100	11,987	100	125	100

Table 3.- Angeles National Forest
Man-caused fires according to distance traveled
on foot by suppression force, by class of fire.
Years 1934-1938, inclusive.

Distance trav- eled on foot	A fires		B fires		C fires				All fires	
	No. of fires		No. of fires		No. of fires		Area burned		No. of fires	
Miles	No.	Cumula- ted %	No.	Cumula- ted %	No.	Cumula- ted %	Acres	Cumula- ted %	No.	Cumula- ted %
0.00 - 0.05	99	74	18	56	20	87	11,696	72	137	73
0.06 - 0.15	24	92	4	69					28	88
0.16 - 0.25	5	95	2	75					5	90
0.26 - 0.35	2	96							2	91
0.36 - 0.45										
0.46 - 0.55			2	81	1	91	3,550	94	5	93
0.56 - 0.65										
0.66 - 0.75	2	98			1	96	11	95	5	95
0.76 - 0.85										
0.86 - 0.95										
0.96 - 1.95	2	99	3	91					5	97
1.96 - 2.95	1	100	2	97					3	99
2.96 - 3.95			1	100					1	99
3.96 - 4.95										
4.96 - 5.95										
5.96 - 6.95										
6.96 - 7.95										
7.96 - 8.95										
8.96 - 9.95					1	100	885	100	1	100
9.96 +										
Unknown										
Total	133	100	32	100	25	100	13,142	100	188	100

Table 4.- San Bernardino National Forest
Man-caused fires according to distance traveled
on foot by suppression force, by class of fire.
Years 1934-1938, inclusive.

Distance trav- eled on foot	A fires		B fires		C fires		Area burned		All fires	
	No. of fires		No. of fires		No. of fires				No. of fires	
Miles	No.	Cumula- ted %	No.	Cumula- ted %	No.	Cumula- ted %	Acres	Cumula- ted %	No.	Cumula- ted %
0.00 - 0.05	135	81	24	67	9	64	13,241	69	218	78
0.06 - 0.15	22	90	4	78	2	79	5,875	99	26	88
0.16 - 0.25	16	97	2	83	1	86	25	99	19	95
0.26 - 0.35										
0.36 - 0.45										
0.46 - 0.55	3	99	3	92					6	97
0.56 - 0.65										
0.66 - 0.75										
0.76 - 0.85										
0.86 - 0.95										
0.96 - 1.95	2	99	2	97	2	100	58	100	6	99
1.96 - 2.95	1	100							1	99
2.96 - 3.95										
3.96 - 4.95			1	100					1	100
4.96 - 5.95										
5.96 - 6.95										
6.96 - 7.95										
7.96 - 8.95										
8.96 - 9.95										
9.96 +										
Unknown										
Total	229	100	36	100	14	100	19,199	100	279	100

Table 5.- Cleveland National Forest
Man-caused fires according to distance traveled
on foot by suppression force, by class of fire.
Years 1934-1938, inclusive.

Distance trav- eled on foot	A fires		B fires		C fires				All fires	
	No. of fires		No. of fires		No. of fires		Area burned		No. of fires	
Miles	No.	Cumula- ted %	No.	Cumula- ted %	No.	Cumula- ted %	Acres	Cumula- ted %	No.	Cumula- ted %
0.00 - 0.05	106	87	30	77	22	76	16,334	66	158	83
0.06 - 0.15	10	95	4	87					14	91
0.16 - 0.25	5	99	2	92	3	86	5,642	89	10	96
0.26 - 0.35	1	100	1	95					2	97
0.36 - 0.45										
0.46 - 0.55					1	90	30	89	1	97
0.56 - 0.65										
0.66 - 0.75										
0.76 - 0.85										
0.86 - 0.95										
0.96 - 1.95			1	97	1	93	2,400	98	2	98
1.96 - 2.95			1	100	1	97	100	99	2	99
2.96 - 3.95					1	100	300	100	1	100
3.96 - 4.95										
4.96 - 5.95										
5.96 - 6.95										
6.96 - 7.95										
7.96 - 8.95										
8.96 - 9.95										
9.96 + Unknown										
Total	122	100	39	100	29	100	24,806	100	190	100

Table 6.- Angelas, San Bernardino, and Cleveland National Forests
Lightning fires according to distance traveled
on foot by suppression force, by class of fire.
Years 1934-1938, inclusive.

Distance trav- eled on foot	A fires		B fires		C fires				All fires	
	No. of fires		No. of fires		No. of fires		Area burned		No. of fires	
Miles	No.	Cumula- ted %	No.	Cumula- ted %	No.	Cumula- ted %	Acres	Cumula- ted %	No.	Cumula- ted %
0.00 - 0.05	65	26	10	20	1	50	80	80	76	25
0.06 - 0.15	23	35	2	24					25	33
0.16 - 0.25	18	42	3	30					21	40
0.26 - 0.35	7	45	1	32					8	43
0.36 - 0.45	2	46							2	44
0.46 - 0.55	33	59	4	40					37	56
0.56 - 0.65										
0.66 - 0.75	2	60	2	44					4	57
0.76 - 0.85	1	60							1	57
0.86 - 0.95										
0.96 - 1.95	37	75	10	64	1	100	20	100	48	73
1.96 - 2.95	19	82	6	76					25	82
2.96 - 3.95	11	87	4	84					15	86
3.96 - 4.95	13	92	1	86					14	91
4.96 - 5.95	4	94	2	90					6	93
5.96 - 6.95	8	97	1	92					9	96
6.96 - 7.95	4	98	1	94					5	98
7.96 - 8.95	1	99							1	98
8.96 - 9.95			1	96					1	98
9.96 +	3	100	2	100					5	100
Unknown										
Total	251	100	50	100	2	100	100	100	303	100

Table 7.- Los Padres National Forest.
Lightning fires according to distance traveled
on foot by suppression force, and class of fire.
Years 1934-1938, inclusive.

Distance trav- eled on foot	A fires		B fires		C fires		All fires	
	No. of fires		No. of fires		No. of fires Acres burned		No. of fires	
Miles	No.	Cumula- ted %	No.	Cumula- ted %	No.	Cumula- ted %	Acres	Cumula- ted %
0.00 - 0.05	4	19	1	17				
0.06 - 0.15	3	33						
0.16 - 0.25	2	43						
0.26 - 0.35	1	48						
0.36 - 0.45								
0.46 - 0.55	1	52						
0.56 - 0.65								
0.66 - 0.75								
0.76 - 0.85								
0.86 - 0.95								
0.96 - 1.95	7	86	3	67	1	17	15	1
1.96 - 2.95			2	100	2	50	28	2
2.96 - 3.95					1	67	40	4
3.96 - 4.95					1	83	2,000	93
4.96 - 5.95	1	90						
5.96 - 6.95	1	95			1	100	41	100
6.96 - 7.95								
7.96 - 8.95								
8.96 - 9.95								
9.96 + Unknown	1	100						
Total	21	100	6	100	6	100	2,124	100

